



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,510	02/07/2006	Hideo Nagai	92478-9800	8521
53044 7590 08/18/2009 SNELL & WILMER L.L.P. (Panasonic) 600 ANTON BOULEVARD SUITE 1400 COSTA MESA, CA 92626				
EXAMINER				
HO, HOANG QUAN TRAN				
ART UNIT		PAPER NUMBER		
2818				
MAIL DATE		DELIVERY MODE		
08/18/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,510

**Applicant(s)**

NAGAI, HIDEO

**Examiner**

Hoang-Quan T. Ho

**Art Unit**

2818

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 35-37, 40, 46 and 52-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-37, 40, 46 and 52 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 53 and 54 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 29, 2009 has been entered.

### ***Response to Amendment***

Applicant's amendment to the claims, filed on May 27, 2009, is acknowledged. Entry of amendment is accepted and made of record. Currently, claims 35 – 37, 40, 46, and 52 – 54 are pending in light of the amendment, in which: claim 35 was amended; claims 1 – 34, 38 – 39, 41 – 45, and 47 – 51 were cancelled; no claim was withdrawn; and claims 53 – 54 were added.

### ***Response to Arguments/Remarks***

Applicant's response filed on May 27, 2009 is acknowledged and is answered as follows.

Applicant's arguments have been fully considered and are persuasive. Therefore, the rejections have been rendered moot. However, upon further

consideration, new grounds of rejections are made below in view of new discovered prior art.

### ***Claim Objections***

Claim 35 is objected to because of the following informalities: reference characters (i.e., ones in parentheses) in the claim should be removed. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 recites substantially the same claim language as amended claim 35, at lines 10 – 13.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 35 – 36, 40 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Suenaga (WO 02/089219 A1).

Regarding claim 35, fig. 8 of Suenaga discloses a semiconductor light emitting device comprising:

a base substrate (5) made of a highly heat-conductive material; and  
a pair of power supply terminal thin-film layers (ref. b region), each being provided on different areas of a first main (bottom of ref. 5) surface of the base substrate (as seen in fig. 8, there are two ref. b regions), and the pair of power supply terminal thin-film layers being electrically connected to each other via through-holes (it is inherent that a complete electrical circuit connection would be made for positive and negative terminals) provided in the base substrate,

wherein a second main surface (top of ref. 5) of the base substrate has provided thereon a semiconductor multilayer epitaxial structure including a first conductive layer, a light emitting layer, and a second conductive layer formed in the stated order (ref. 1; pg. 6, line 7 – pg. 7, line 10), the multilayer epitaxial structure is mounted on the base substrate in such a manner that a last epitaxially-grown layer having a structure characteristic of being grown on a single-crystal substrate different from the base substrate is positioned closer to the base substrate than a portion of a first epitaxially-grown layer (pg. 6, lines 19 – 24),

a first electrode thin-film layer (pg. 6, line 25 – pg. 7, line 2) is in contact with the first conductive layer, a second electrode thin-film layer (pg. 6, line 25 – pg. 7, line 2) is

in contact with the second conductive layer, a phosphor film (ref. 8) covers the semiconductor multilayer epitaxial structure (as seen in fig. 8) and a first thin-film layer (one of ref. 4) and a second thin-film layer (other ref. 4) electrically connect the first electrode thin-film layer and the second electrode thin-film layer respectively via the through-holes (as seen in fig. 8).

Regarding claim 36, Suenaga discloses the semiconductor light emitting device of Claim 35, Suenaga discloses wherein the multilayer epitaxial structure is formed on the base substrate leaving a space along each edge of a main surface of the base substrate which faces the multilayer epitaxial structure (where refs. 2 – 3 points to); and the first through hole and the second through hole are provided in a peripheral portion of the base substrate, the peripheral portion corresponding to the space (as seen in fig. 8).

Regarding claim 40, Suenaga discloses the semiconductor light emitting device of Claim 35, Suenaga discloses wherein the multilayer epitaxial structure having a structural characteristic of epitaxial growth on a single-crystal substrate different from the base substrate, is mounted on the base substrate (pg. 6, lines 19 – 24).

Regarding claim 46, Suenaga discloses the semiconductor light emitting device of Claim 35, Suenaga discloses wherein the first and the second through holes are positioned in a periphery of the base substrate (as seen in fig. 8), and the multilayer

epitaxial structure is not positioned on or over the first and second through holes (as seen in fig. 8).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suenaga as applied to claim 35 above, and further in view of Baik et al. (U.S. Pat. App. Pub. No. 2004/0108511 A1), hereinafter as Baik.

Regarding claim 37, Suenaga discloses the semiconductor light emitting device of Claim 35, but Suenaga may not disclose the following limitations whereas Baik discloses that it is known in the art to provide further comprising:

a metal reflective film (ref. nos. 35, 37 and/or 39) that is sandwiched between the multilayer epitaxial structure (ref. nos. 24, 26 and 28) and the base substrate (Suenaga's substrate, ref. 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Suenaga with the reflective film of Baik, in order to provide excellent reflective characteristics (¶18).

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suenaga as applied to claim 35 above.

Regarding claim 52, Suenaga discloses the semiconductor light emitting device of Claim 35, Suenaga discloses at pg. 17 that the position of phosphor material is not limited to anywhere specific. Therefore, one of ordinary skill in the art would be capable of providing wherein the phosphor layer covers an entirety of the base substrate, including surrounding edge portions of the base substrate, and a peripheral lateral surface of the base substrate and a peripheral lateral surface of the phosphor layer are a continuous surface.

#### ***Allowable Subject Matter***

Claims 53 – 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



The following is an examiner's statement of reasons for the indication of allowable subject matter: The cited art, whether taken singularly or in combination, especially when all limitations are considered within the claimed specific combination, fails to teach or render obvious the substrate materials of claims 53 – 54.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is to be noted that Suenaga (U.S. Pat. App. Pub. No. 2004/0120155 A1) is the English counter-part of Suenaga (WO 02/089219 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Quan T. Ho whose telephone number is 571-272-8711. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoang-Quan T Ho/  
Examiner, Art Unit 2818  
August 17, 2009

/Andy Huynh/  
Primary Examiner, Art Unit 2818